

What is claimed is:

1. A rotation transfer mechanism comprising:

a rotatable ring comprising an annular gear portion
on an outer peripheral surface of said rotatable ring,
5 said rotatable ring configured to perform an
advancing/retracting operation in which said rotatable
ring moves along a first rotational axis while rotating
about said first rotational axis in a first range of
rotation of said rotatable ring, and further configured
10 to perform a fixed-position rotating operation in which
said rotatable ring rotates without moving along said
first rotational axis in a second range of rotation of
said rotatable ring;

a rotation transfer gear configured to rotate about
15 a second rotational axis parallel to said first rotational
axis, said rotation transfer gear including a gear portion
engageable with said annular gear portion and a rotation
limit portion engageable with an outer edge of said
annular gear portion to prohibit said rotation transfer
20 gear from rotating, said gear portion and said rotation
limit portion located at different axial positions on said
rotation transfer gear; and

at least one driven member drivable by a rotation
of said rotation transfer gear,
25 wherein said rotation transfer gear and said

rotatable ring are positioned relative to each other such that said gear portion and said annular gear portion are engaged with each other when said rotatable ring performs said fixed-position rotating operation, and

5 wherein said rotation transfer gear and said rotatable ring are positioned relative to each other such that said rotation limit portion faces said annular gear portion and is configured to contact said outer edge of said annular gear portion when said rotatable ring
10 performs said advancing/retracting operation.

2. The rotation transfer mechanism according to claim 1, wherein said driven member is guided in a direction generally parallel to said first rotational axis and said second rotational axis, said driven member
15 comprising a driving-direction converter configured to convert torque transferred from said rotation transfer gear into linear movement of said driven member.

3. The rotation transfer mechanism according to claim 1, wherein said driving-direction converter
20 comprises a cam-incorporated rotatable cylinder having a substantially cylindrical shape which is rotatable on a rotational shaft extending generally parallel to said second rotational axis in accordance with said rotation of said rotation transfer gear, at least one cam surface
25 located on an outer peripheral surface of said cam-

incorporated rotatable cylinder.

4. The rotation transfer mechanism according to claim 3, further comprising a reduction gear train provided between said rotation transfer gear and said
5 cam-incorporated rotatable cylinder,

wherein said cam-incorporated rotatable cylinder includes a spur gear portion which is in mesh with a gear of said reduction gear train. 5. The rotation transfer mechanism according to claim 3, wherein said
10 driven member comprises a front movable member and a rear movable member both of which are moveable in a direction generally parallel to said first rotational axis and said second rotational axis while changing the distance therebetween when said cam-incorporated rotatable
15 cylinder is rotated.

6. The rotation transfer mechanism according to claim 1, wherein said annular gear portion of said rotatable ring comprises a reduced gear-tooth configured to firstly engage said gear portion of said rotation
20 transfer gear when said rotatable ring moves from a first state in which said advancing/retracting operation is performed to a second state in which said fixed-position rotating operation is performed, a tooth depth of said reduced gear-tooth being smaller than those of other gear
25 teeth of said annular gear portion.

7. The rotation transfer mechanism according to claim 1, wherein said rotatable ring comprises a male helicoid located on said outer peripheral surface of said rotatable ring, on which said annular gear portion is
5 located.

8. The rotation transfer mechanism according to claim 1, wherein said rotation transfer mechanism is incorporated in a camera having a zoom lens, and

wherein zoom lens comprises an imaging optical
10 system including a plurality of movable optical elements which move along an optical axis of said imaging optical system by a rotation of said rotatable ring.

9. The rotation transfer mechanism according to claim 8, wherein said camera comprises a zoom finder
15 associated with said imaging optical system, and

wherein said driven member comprises at least one support frame which supports at least one optical element of said zoom finder.

10. The rotation transfer mechanism according to claim 8, wherein said camera comprises a zoom flash
20 associated with said imaging optical system, and

wherein said driven member is engageable with at least one element of said zoom flash.

11. A camera having a variable-focal-length
25 imaging optical system and a driven system driven in

association with a focal-length varying operation of said variable-focal-length imaging optical system, said variable-focal-length imaging optical system changeable between an operating state in which said variable-focal-length imaging optical system performs said focal-length varying operation and a non-operating state in which said variable-focal-length imaging optical system retracts,

said camera comprising:

10 a rotatable ring which includes an annular gear portion on an outer peripheral surface of said rotatable ring, and configured to perform an advancing/retracting operation in which said rotatable ring linearly moves along while rotating about a first rotational axis to change said variable-focal-length imaging optical system change said operating state and said non-operating state, and further configured to perform a fixed-position rotating operation in which said rotatable ring rotates without linearly moving along said first rotational axis to make said variable-focal-length imaging optical system perform said focal-length varying operation; and

20 a rotation transfer gear rotatable about a second rotational axis generally parallel to said first rotational axis, and including a gear portion engageable with said annular gear portion and a rotation limit

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portion engageable with an outer edge of said annular gear
portion to prohibit said rotation transfer gear from
rotating, said gear portion and said rotation limit
portion located at different axial positions on said
5 rotation transfer gear,

wherein said rotation transfer gear and said
rotatable ring are positioned relative to each other such
that said gear portion and said annular gear portion are
engaged with each other when said rotatable ring performs
10 said fixed-position rotating operation, and

wherein said rotation transfer gear and said
rotatable ring are positioned relative to each other such
that said rotation limit portion faces said annular gear
portion to be engageable with said outer edge of said
15 annular gear portion when said rotatable ring performs
said advancing/retracting operation.

12. The camera according to claim 11, wherein said
first rotational axis and said second rotational axis are
generally parallel to an optical axis of said imaging
20 optical system.

13. The camera according to claim 11, wherein said
driven system is an optical system of a zoom finder
incorporated in said camera.

14. The camera according to claim 11, wherein said
25 driven system is a system of a zoom flash incorporated

in said camera.

15. The camera according to claim 11, wherein said annular gear portion of said rotatable ring comprises a reduced gear-tooth configured to firstly engage said gear
5 portion of said rotation transfer gear when said rotatable ring changes from a first state in which said advancing/retracting operation is performed to a second state in which said fixed-position rotating operation is performed, a tooth depth of said reduced gear-tooth being
10 smaller than those of other gear teeth of said annular gear portion.